The intraoperability between AutoPIPE and SACS enables complete piping designs for offshore structures in hours, not weeks.

New SACS Decommissioning Offering That Automates Cutting
Plans for Offshore Structures Is Among Highlights of Latest Release

Bentley's SACS now includes an integrated analysis and design solution for the complete lifecycle of offshore structures, including construction, transportation, in-place, and decommissioning. This new capability enables engineers to reduce heavy offshore structures into manageable pieces when removing them from complex working environments.

Phil Christensen, SVP, analytical modeling, at Bentley Systems, said, "When the price of oil dropped by more than 50 percent, engineering companies in the oil and gas industry had to rapidly adapt to sustain their businesses. This disruption has created a very challenging market in which technology plays a key role in adjusting to the changed circumstances."

This latest advancement in SACS reinforces Bentley's commitment to adapt its offerings to meet the changing requirements of the offshore energy industry. According to a recent report by IHS Markit, there has been a significant rise in the number of planned decommissioning projects, which is attributed to global economic

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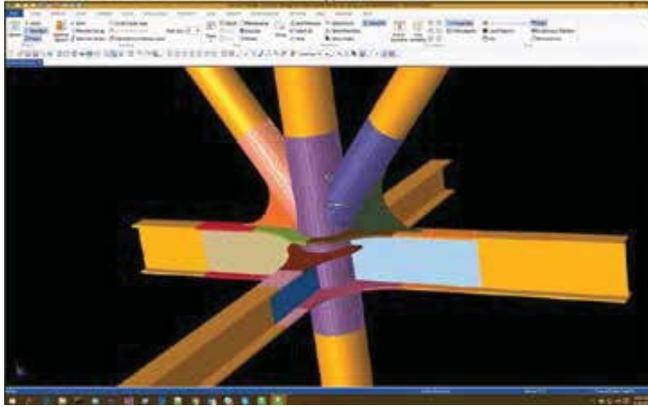
SACS Precede drawing tools simplify meshed joint generation.

Determine optimal cutting plans to meet project requirements with automated processes in SACS decommissioning tool.
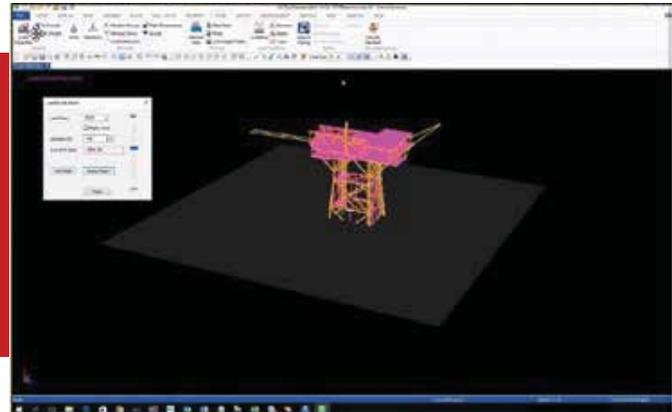
conditions and assets in mature fields reaching their end of life. As decommissioning carries similar risks and challenges to marine construction, special consideration must be applied to the safety, environmental, economic, and social aspects of any project.

The SACS decommissioning capabilities automate the process and allow engineers to determine optimal cutting plans to meet decommissioning project requirements, such as structure weight for lift and transport. Users fully control the structural weight through change in elevation and can apply automatic cutting of the structure at user-defined elevations. Sum of forces for any elevation can be reviewed graphically or in tabular reports.

The new SACS release also includes improved intraoperability with AutoPIPE, an enhanced GUI for joint meshing, and other key advancements including:

• Rectangular hollow section (RHS) joint design
• Full-iterative solution for P-Delta analysis
• Wind loading based on API 4F functionality
• SACS-FAST non-integrated interface for wind turbine analysis
• Enhanced collapse analysis

With integrated workflows spanning AutoPIPE and SACS, piping design for

offshore structures can be completed in hours instead of weeks. Workflows to add pipe loads to offshore structures improve efficiency and provide accurate analysis results. Importing piping geometry from AutoPIPE into SACS enables the design of secondary steel and piping connection supports on the primary offshore structure.

Users can perform combined stress, and pipe and stress analysis after they have imported piping connections and the structure from SACS into AutoPIPE. Moreover, importing support reaction results from AutoPIPE to SACS for structural analysis can save hundreds of hours of manual data entry. Lastly, completing the design and analysis with realistic models results in potential costs savings and improved risk mitigation.

Engineers designing FPSO topsides have indicated they can spend 40 percent of their time developing detailed finite element models of the complex joints in these structures. SACS Precede drawing options enable easy creation of plate surfaces from any orientation, improving efficiency for meshed joint generation. Additionally, the SACS methodology eliminates the requirement to model joints externally to determine SCFs, or perform fatigue analysis or detailed strength analysis. A SACS finite element mesh, a model that

captures complex connection behaviors, is fully integrated with SACS beam elements to enable simple and powerful workflows. Engineers can easily create meshes within seconds, for any complex joint, all withina single interface, and save hundreds of man-hours in manual calculations. The simplified process enables completion without requiring specialist finite element expertise.

About SACS

SACS is an integrated finite element structural analysis package of applications for the design of offshore structures. The automated workflows and graphical interactive redesign capabilities improve project efficiency. SACS includes the latest offshore structural design standards for offshore structure compliance. The unified analysis environment enables the efficient exploration of alternatives and optimization. By using Bentley's scenario services cloud computing capability, users can drastically decrease the run time for analysis types requiring thousands of time history analysis for fatigue and strength design for offshore wind turbine platforms. SACS has a comprehensive interface to Bentley's ProjectWise application allowing users to collaborate on projects from multiple locations.